

# E-Seals Smooth Border Crossings

A U.S. Department of Transportation program shows that electronic seals could help secure containers and reduce border congestion.

Sept. 3, 2002 -- After Sept. 11, the United States government began checking every container truck entering the country from Canada. Lines at the border stretched for miles, and auto plants in Detroit that depended on the timely shipments of parts from Canada were nearly shut down because of the delays.

The terrorist attacks prompted the U.S. Department of Transportation to step up its efforts to find technologies that could secure the containers without bringing trade to a halt. RFID had been used to monitor traffic flowing between the U.S. and Canada at the Blaine commercial vehicle crossing, on the border between Vancouver and Seattle since 2000. The DOT decided to team with the Washington State Department of Transportation to see if electronic-seals could be used to secure containers traveling through the Northwest International Trade Corridor.

The system for tracking trucks moving along the corridor was designed and built in 1999 by TransCore, a San Diego company that provides technology-based products and services for managing ground transportation systems, assets, and transactions. The DOT hired Transcore to add the capability of securing containers with electronic seals to the existing system.

Seals from a company called eLogicity were placed on containers from a Suzuki plant in Japan. The seals have an RFID transponder. If the seal is broken and the container is opened, the next time the seal is read, it will indicate that the container has been compromised. (The seals can't detect when someone cuts a hole in the side of a container, but work is underway to devise systems that can.)

When the container arrives at the Port of Seattle, the seals are read. This part of the test has been underway for a while and has been successful. In the next phase of the test, which is ongoing, the containers are placed on a semi-trailer, which is tracked using a transponder placed in the cab. The unique ID from the seal, which identifies the container, is matched to the truck's unique ID in TransCore's database.

A reader at the port's gate indicates the truck has left the port. The truck is tracked at six weigh stations and processing centers along a 300-mile stretch of Interstate 5. When the truck arrives at the Blaine border crossing, the e-seal is read with a handheld reader or a roadside reader.

Information on the carrier, vehicle, cargo, location and time of detection, drivers, and security status is uploaded to a secure Web site. The shipper and carrier, as well as U.S. Customs Service agents and the U.S. Department of Agriculture agents can view the information on a secure Web site.

"What we have built is an operating system that existing today that is doing largely what needs to be done to secure cargo," says Tim Bickmore, TransCore's senior VP of business development. "We have the technology in place for tracking, for monitoring the integrity of the seal, and for coordinating the port, shipper, customs and DOT."

The system hasn't reduced congestion at the border crossing yet because there is no special lane for trucks with sealed containers. It is not clear whether the DOT will take the project forward, but TransCore hopes that eventually many containers entering the U.S. and Canada will have e-seals and that a standard will be adopted for tracking containers moving across the border.

TransCore has acted as the integrator for the pilot and is evaluating new transponders and e-seals and readers as they become available. Eventually the e-seals might be read automatically along the roadside and at a fast-track lane for low-risk shipments. A similar system built by TransCore for expediting travel by people between Mexico and the United States has dramatically reduced congestion.

The DOT is conducting other tests under its intelligent transportation system. When the DOT has evaluated the available technology, it will be able to quantify the performance characteristics of a secure supply chain and suggest some minimum performance requirements. It will be up to Congress to provide the funding needed to deploy a system nationwide. Companies may also have to pay for the RFID tags and seals.

"The technology has to be real and affordable," says Bickmore. "It has to give a benefit to the commercial community. We feel the benefit is that the technology will enable you to clear that customs' points quickly and know shipments are secure."

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